

Remarks/Arguments

Reconsideration of this application is requested.

Claim Status

Claims 1-19 are presented. Claims 1, 4, 8, 9, 12, 13, 15, 17 and 18 are amended, and claims 14 and 16 are canceled without prejudice. Thus, claims 1-13, 15 and 17-19 are now pending.

Allowable Subject Matter

Although the cover page of the Action indicates that claims 1-19 are rejected, the Action provides no grounds for rejection of claims 11, 15 and 16. Thus, applicant submits that these claims should either be allowed, or that a non-final action be issued including specific grounds for rejection of these claims so that applicant has a full opportunity to respond. With respect to claim 16, applicant notes that claim 16 is canceled without prejudice since its subject matter is incorporated into amended claim 12.

Claim Rejections – 35 USC 102

Claims 12-14 and 17 are rejected under 35 USC 102(b) as anticipated by Dworkin (US 3,727,061). In response, independent claims 12 and 17 are amended to clearly distinguish over Dworkin. Claim 14 is canceled, without prejudice, since its limitations are incorporated into amended claim 12.

First, claims 12 and 17 are amended to clarify that they are directed to the detection and processing of *infrared* signals. Dworkin by contrast, is directed to a pulse laser communication system that utilizes laser beams and is guided by completely different consideration than the infrared communication system of the present invention. Thus, since Dworkin does not disclose an infrared communication system (claim 12) and method (claim 17), it cannot anticipate those claims or claims 13 and 14 dependent thereon.

Second, claims 12 and 17 are also amended to specify that the communication system includes a bandpass filter that permits only those signals having a center wavelength indicative of a home or office infrared control system signal to pass

through. All signals outside of this band are blocked. Thus, the filter is a discriminating, bandpass filter which permits only those signals in a narrowly defined band to pass through. As discussed in applicant's specification, modern appliances such as plasma televisions emit significant amounts of infrared radiation that may be in close proximity to the frequency band of the desired infrared control signals (i.e., transmissions from remote controls). Under applicant's invention, these signals are completely blocked by the filter while only the desired control signals are allowed to pass through.

The Action cites Dworkin at column 6, lines 46-50, for its disclosure of a filter 31. Again, applicant notes that Dworkin is directed to lasers and there is no teaching or suggestion that filter 31 is configured to only allow infrared control system signals to pass through. Moreover, Dworkin states that filter 31 "...is used for removal of background radiation and must be sufficiently wide to allow for frequency drift of the transmitter lasers...". Thus, Dworkin's filter 31 has a wideband and functions only to remove background noise. Applicant's filter, by contrast, has a very specifically defined and discriminating band that allows only signals of a specific sort to pass through, while all others are blocked.

Finally, applicant notes that Goto (US 6,677,259) is cited against claims 1-3 and 7-10, which claim the characteristics of the bandpass filter in greater detail. Goto is considered at length below, and applicant's arguments with respect to Goto vis-a-vis claims 1-3 and 7-10 are equally applicable to claims 12-14 and 17, as amended.

Claim Rejections – 35 USC 103(a)

Claim 18

Claim 18 depends from claim 17 and is rejected under 35 USC 103(a) as obvious over Dworkin in view of McGuire (US 6,114,684). McGuire is cited for its disclosure of use of a plurality of photodiode detectors, but does not cure the deficiencies of Dworkin discussed above. Like Dworkin, McGuire is directed to lasers and in particular a system for jamming a laser listening device. Dworkin and

McGuire, taken alone or in combination, do not disclose or suggest an infrared communication system utilizing a discriminating, bandpass filter as claimed by applicant. The rejection of claim 18 under 35 USC 103(a) should be withdrawn.

Claim 19

Claim 19 depends from claim 17 and is rejected as obvious over Dworkin in view of McGuire and Hamilton (US 6,590,682). Hamilton is cited for its disclosure of an AGC loop for adjusting an amplifier 29. It contains no bandpass filter and does not cure the deficiencies of Dworkin and McGuire discussed above. The rejection of claim 19 under 35 USC 103(a) should be withdrawn.

Claim 4

Independent claim 4 is rejected as obvious over Dworkin in view of Hamilton. In response, claim 4 is amended in a similar fashion to claims 12 and 17 and now requires that the bandpass filter pass desired impinging infrared light within a frequency band used by home and office infrared control systems and block undesired impinging wavelengths of light outside of this frequency band. As discussed at length above, Dworkin and Hamilton completely fail to disclose such a system. Neither contains any discussion or suggestion of the problems and issues particular to filtering of infrared control system signals.

In addition, and in any event, applicant questions the combination of Dworkin and Hamilton. Dworkin is directed to a pulse laser communication system. Hamilton is directed to a system for adjusting infrared signal transmission power in response to incident signal power amplitude, and has nothing to do with the filtering issues addressed by applicant's invention. Thus, applicant submits that one of ordinary skill in the art would not combine a pulse laser communication system with a system for adjusting infrared signal transmission power in order to solve problems relating to infrared control system signal discrimination and selectivity.

Claims 5 and 6

Claims 5 and 6 depend from claim 4 and are rejected as obvious over Dworkin, Hamilton and McGuire. Each of these references has already been discussed at length. McGuire is cited for its disclosure of a plurality of photodiode detectors in a system for jamming a laser listening device (see discussion for claim 18) and does not remedy the deficiencies of Dworkin and Hamilton. The rejections of claims 5 and 6 under 35 USC 103(a) should be withdrawn.

Claims 1 and 2

Claims 1 and 2 are rejected as obvious over Dworkin in view of Hamilton and Goto (US 6,677,259). In response, applicant submits that claims 1 and 2, as filed, are distinguishable over Dworkin, Hamilton and Goto.

Claim 1 recites the specific characteristics of a bandpass filter that enable it to pass home and office infrared control signals while rejecting all other signals outside this band: the bandpass filter is configured to have a center wavelength falling within the range of about 920nm to about 980nm; an 80 percent bandwidth of approximately 10nm; and a 50 percent bandwidth of approximately 20nm (as amended). As discussed at pages 7-8 of applicant's specification, the inventors have found that a significant number of infrared transmitters employed in numerous home and office appliances employ infrared signals having center wavelengths in this range. Importantly, other appliances such as plasma televisions emit intense infrared radiation at frequencies just outside this range and must be blocked. Thus, it is important that the bandpass filter be discriminating and narrowly defined.

Again, it is noted that Dworkin is directed to a pulse laser configuration system. The Action arbitrarily selects a filter out of this laser context, asserts that it has characteristics resembling those of applicant's filter, and concludes that applicant's invention is rendered obvious by this combination. Thus, applicant respectfully requests an explanation as to why one of ordinary skill in the art considering the laser system of Dworkin would be motivated to "plug in" the filter of Goto which contains no discussion or suggestion of its suitability for use in a laser system.

Moreover, the filter of Goto has a wavelength range of 950nm to 1600nm, while applicant's claims require a different and narrower range of 920nm to 980nm. As has been discussed herein, this range has been found by the inventors to be critical for admitting the infrared control signals while excluding interfering and closely neighboring signals such as plasma infrared radiation.

Goto's disclosed range completely excludes the lower half (920nm-950nm) of applicant's range, and thus would exclude half of the potential range of infrared control signals that should be passed through the filter. Accordingly, Goto's filter would render applicant's system inoperable for all infrared transmitters and devices in the lower half of the range. Moreover, Goto's filter would admit a wide range (980nm-1600nm) of potentially interfering signals, which is precisely the problem that applicant's narrower range, discriminating filter addresses.

In addition, the Action asserts that Goto, in the abstract and col. 3, line 63 to col. 4, line 5, discloses an 80 percent bandwidth no less than about 10nm wide and a 50 percent bandwidth no less than about 20nm, as is required by applicant's claims. First, applicant notes that it has amended claims 1, 7 and 8 to require that a 50% bandwidth of approximately 20nm and an 80 percent bandwidth of approximately 10nm. Moreover, Goto simply does not contain the disclosure asserted by the Action. As discussed in applicant's paragraph [0032] and Fig. 5, applicant's claim limitations are directed to transmission intensity percentage as a function of wavelength range. The referenced portion of Goto, by contrast, states that "light transmittance of 60% or over *for plate thickness of 10mm* is required for this wavelength range". Thus, Goto is discussing light transmittance for a given plate thickness, and not transmission intensity percentage as a function of wavelength range.

Finally, applicant respectfully traverses the suggestion in the Action that the claimed characteristics of applicant's filter are "merely an engineering design choice". Applicant investigated a particular problem and determined the precise bandwidth range and filter characteristics for solving the problem. A specific and

discriminating range is required, and anything outside of this range will result in a non-functional filter. As discussed above, Goto's filter would be completely inadequate for solving the issues addressed by applicant. Since neither Dworkin, Goto, nor any of the other cited reference even acknowledge the problem that applicant's application is specifically directed to, it is not a mere "design choice" to take those unrelated references and arrive at applicant's solution.

Claim 3

Claim 3 depends from claim 1 and is rejected as obvious over Dworkin, Hamilton, Goto and Solomon (US 3,725,888). Solomon is cited for its disclosure of an amplifier that responds to certain frequencies, and does not remedy the deficiencies of Dworkin and Goto discussed at length above. The rejection of claim 3 under 35 USC 103(a) should be withdrawn.

Claims 7-10

Claims 7-10 depend from claim 4 and are rejected as obvious over Dworkin, Hamilton, McGuire and Goto. Claims 7-10 set forth the same bandpass and filter characteristics discussed with reference to claim 1. In addition, claims 7 and 8 are amended to track the amendments to claim 1. Thus, claims 7-10 are allowable for the same reasons as discussed for claim 1.

Conclusion

This application is now believed to be in condition for allowance. The Examiner is invited to telephone the undersigned to resolve any issues that remain after entry of this amendment.

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Amdt. dated September 15, 2005
Reply to Office Action of June 15, 2005

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Any fees due with this response may be charged to our Deposit Account No. 50-1314.

Respectfully submitted,
HOGAN & HARTSON L.L.P.

Date: September 15, 2005

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